

Promises of Transcatheter Tricuspid Valve Interventions in Patients with Clinically Significant Tricuspid Regurgitation: A Meta-Analysis



Kaveh Rezaei Bookani, MD.¹, Nso Nso, MD. MPH.², Farshid Radparvar MD.³, Mark Ricciardi, MD.¹

Division of Cardiovascular Disease, University of Chicago (Northshore Program), Evanston, IL

Department of Internal Medicine, Icahn School of Medicine at Mount Sinai/Queens, NY

Division of Cardiovascular Disease, Icahn school of medicine at Mount Sinai/Queens, NY



Introduction

- Clinically significant tricuspid regurgitation (TR) is common especially in patients with structural heart disease.
- Moderate to severe TR is independently associated with poor clinical outcomes.
- Surgical interventions for TR are associated with high mortality and rarely performed for isolated TR.
- Several transcatheter interventions for tricuspid valve repair are under investigation and can be categorized into 1) edge-to-edge repair, 2) transcatheter annuloplasty, 3) spacer devices and 4) bioprosthetic valves.
- This metanalysis is aimed to summarize the efficacy and safety of transcatheter interventions.

Method

- Following PRISMA guidelines and according to the Cochrane Handbook for Systematic Reviews of Interventions, we searched PubMed, Scopus, Web of Science, and Cochrane CENTRAL for all prospective clinical registries and trials published until April 2020.
- We performed the analysis of continuous outcomes using the mean difference (MD) while used the risk ratio (RR) for analysis of dichotomous outcomes.
- We included the following outcomes: Tricuspid Annular Plane Systolic Excursion (TAPSE), Vena Contracta (VC), Tricuspid Annulus Diameter (TAD), Tricuspid Regurgitation Volume (TRV), Left Ventricular Ejection Fraction (LVEF), six minutes walking test, bleeding, stroke, and mortality rates.

Fig 1: Tricuspid Regurgitation Volume

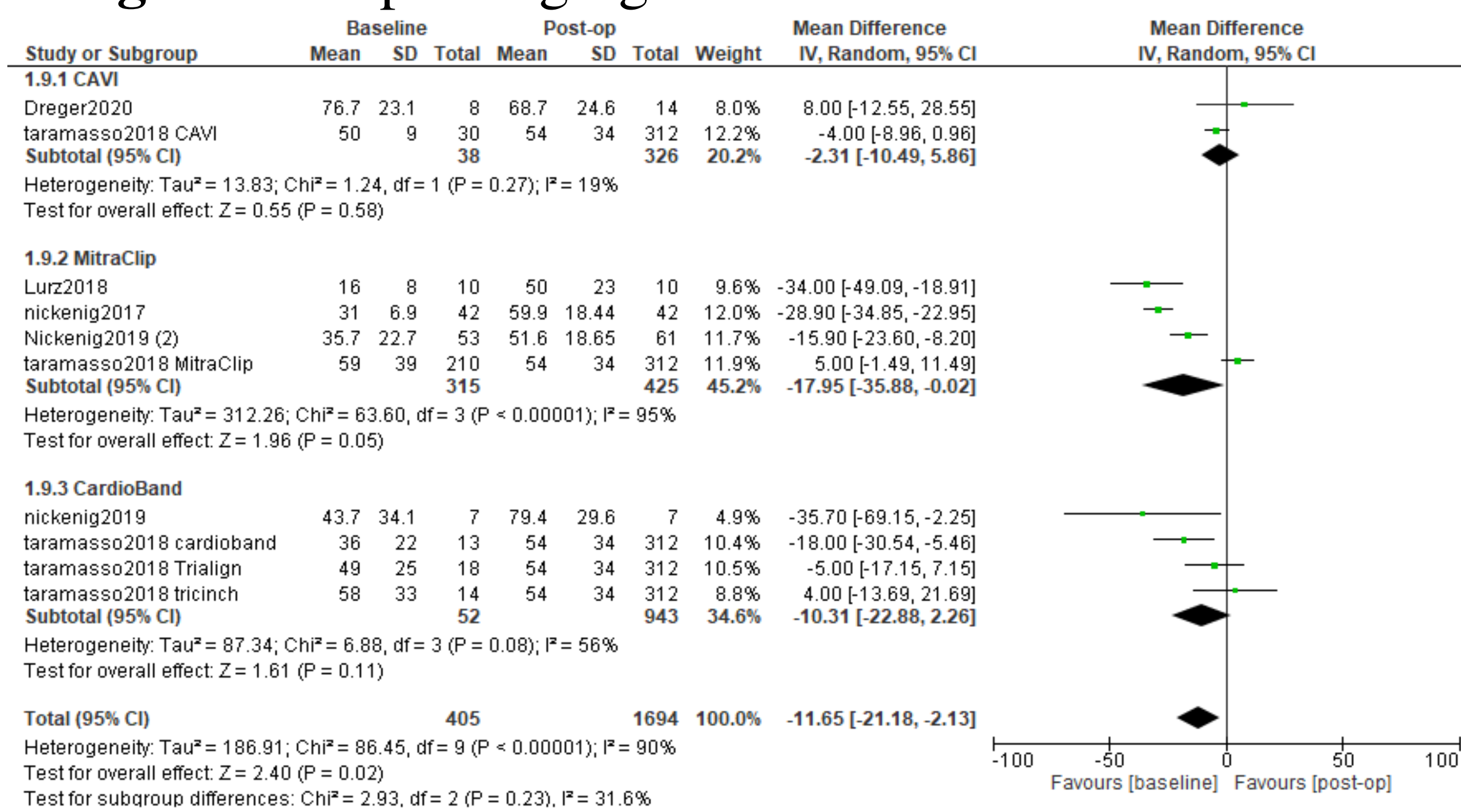


Fig 2: Vena Contracta

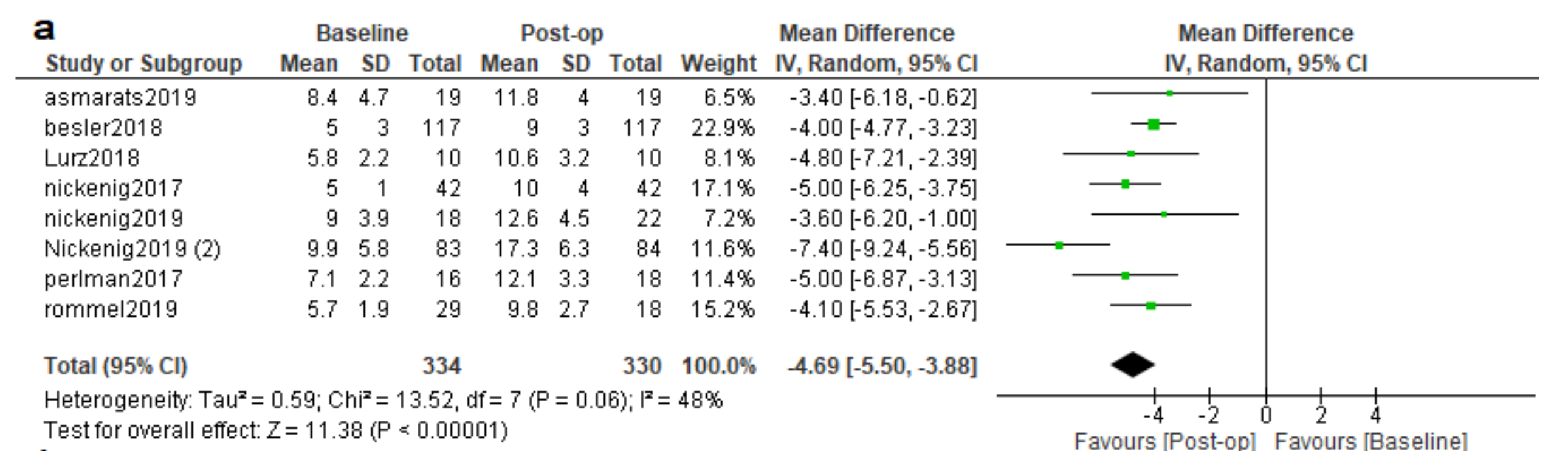


Fig 3: Tricuspid Annulus Diameter

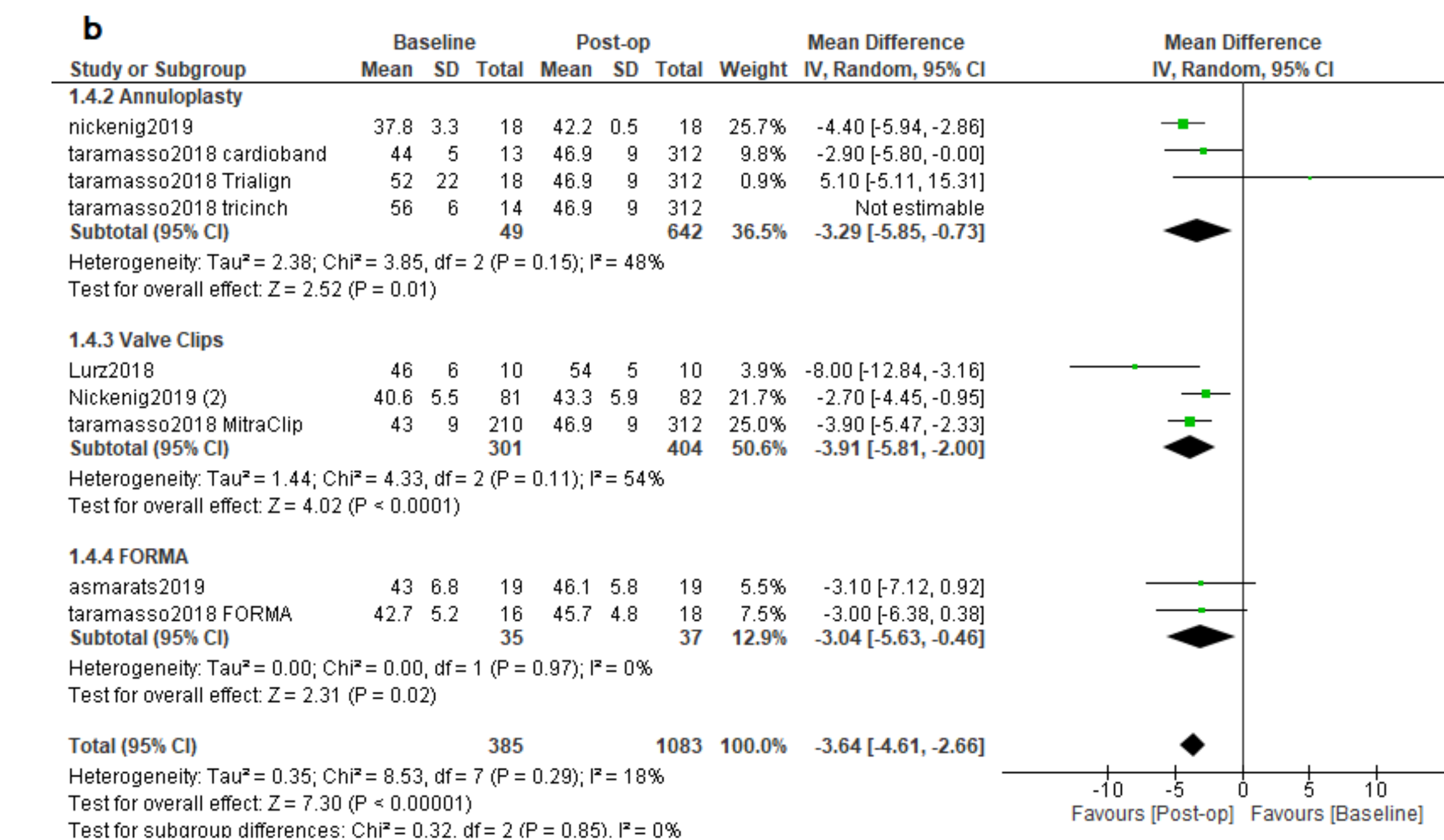


Fig 4: Left Ventricular Ejection Fraction

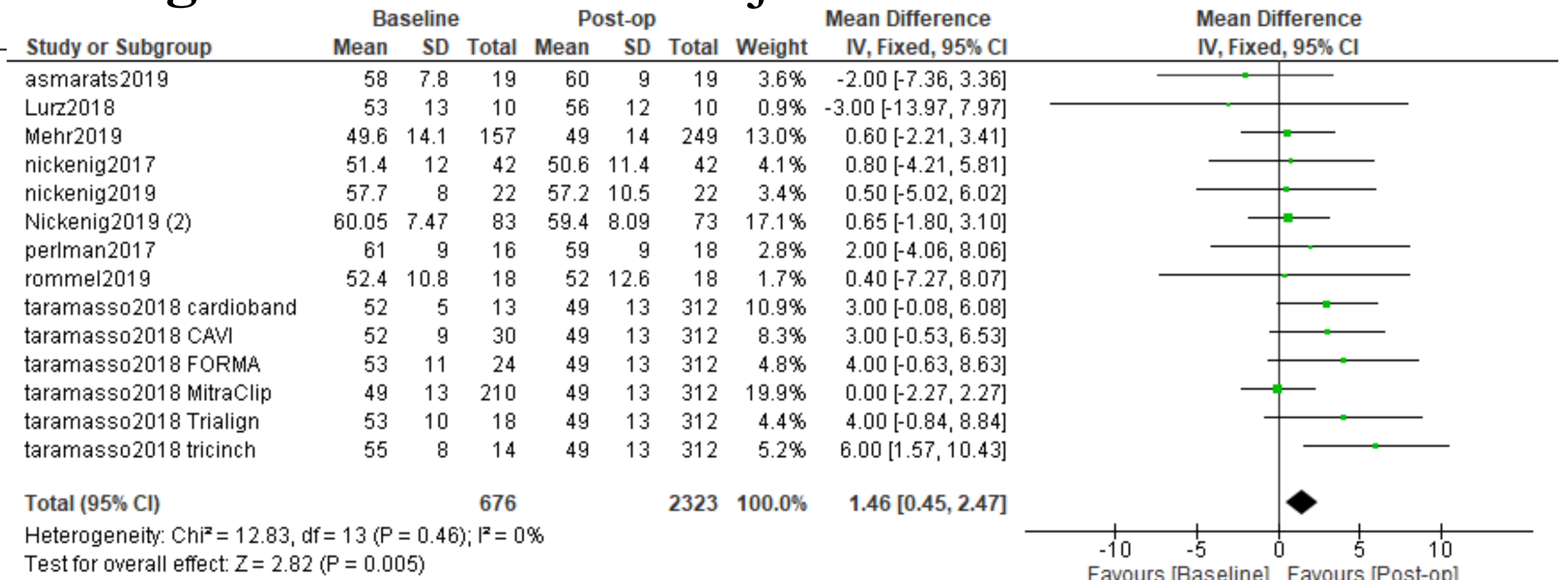


Fig 5: Tricuspid Annular Plane Systolic Excursion

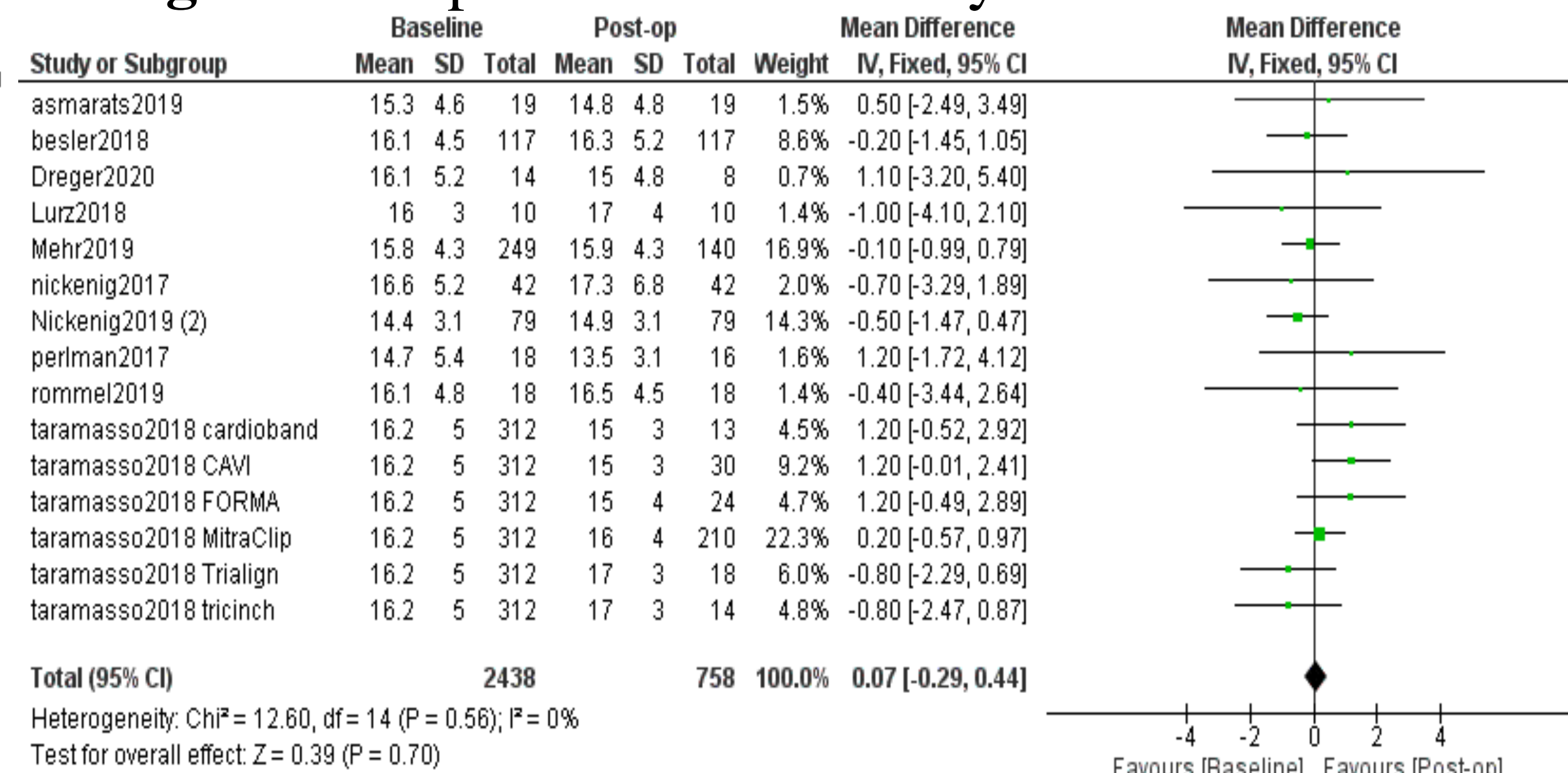


Fig 6: Six Minutes Walking Test

